1. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{193600}{484}}$$

A. Whole

B. Integer

C. Not a Real number

D. Irrational

E. Rational

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2. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-4 + 5i)(-3 - 10i)$$

A. $a \in [-42, -35]$ and $b \in [55, 58]$

B. $a \in [-42, -35]$ and $b \in [-57, -53]$

C. $a \in [12, 14]$ and $b \in [-52, -47]$

D. $a \in [58, 63]$ and $b \in [24, 30]$

E. $a \in [58, 63]$ and $b \in [-31, -19]$

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3. Simplify the expression below and choose the interval the simplification is contained within.

$$6 - 1^2 + 3 \div 20 * 5 \div 10$$

A. $[7, 7.04]$

B. $[7.07, 7.09]$

C. $[4.97, 5.02]$

D. $[5.07, 5.09]$

E. None of the above

4. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-780}{6}}i + \sqrt{143}i$$

A. Pure Imaginary

B. Not a Complex Number

C. Irrational

D. Rational

E. Nonreal Complex

5. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-4 + 9i)(6 - 3i)$$

A. $a \in [-2, 4]$ and $b \in [65, 68]$

B. $a \in [-26, -23]$ and $b \in [-33, -25]$

C. $a \in [-52, -50]$ and $b \in [-43, -41]$

D. $a \in [-2, 4]$ and $b \in [-71, -61]$

E. $a \in [-52, -50]$ and $b \in [42, 49]$

6. Simplify the expression below and choose the interval the simplification is contained within.

$$16 - 8 \div 6 * 9 - (18 * 20)$$

A. $[-344.15, -341.15]$

B. $[370.85, 377.85]$

C. $[-357, -353]$

D. $[-288, -276]$

E. None of the above

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7. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{9 - 77i}{6 - 4i}$$

A. $a \in [-6.5, -4.5]$ and $b \in [-10, -9]$

B. $a \in [6.5, 7.5]$ and $b \in [-8.5, -7]$

C. $a \in [6.5, 7.5]$ and $b \in [-426.5, -425]$

D. $a \in [0, 2.5]$ and $b \in [18, 20]$

E. $a \in [361.5, 363]$ and $b \in [-8.5, -7]$

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8. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-990}{9}}i + \sqrt{165}i$$

A. Pure Imaginary

B. Irrational

C. Not a Complex Number

D. Nonreal Complex

E. Rational

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9. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{54 + 55i}{-1 + 8i}$$

A. $a \in [5, 6.5]$ and $b \in [-8.5, -7]$

B. $a \in [-54.5, -53]$ and $b \in [6, 7.5]$

C. $a \in [-8.5, -7]$ and $b \in [5, 6.5]$

D. $a \in [385, 386.5]$ and $b \in [-8.5, -7]$

E. $a \in [5, 6.5]$ and $b \in [-487.5, -486]$

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10. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{42849}{529}}$$

A. Whole

B. Rational

C. Irrational

D. Integer

E. Not a Real number
